

Sustainable Innovation 2025

Sustainable Innovation in Products, Services and Business Models

Past, Present and Future

25th International Conference

30th and 31st October 2025

University for the Creative Arts

Epsom

Surrey

UK

<https://cfsd.org.uk/>

Materials-First and Product-First Approaches to Creating Local, Circular & Bio-based Textiles in the HEREWEAR Project.

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Today, a large amount of clothing is produced in low cost countries, sometimes far away from the brands creating them, under poor labour conditions and with few concerns for the environmental impact. The EU-funded [HEREWEAR](#) project had the vision to build a holistic, systemic approach towards the creation of an EU market for locally produced textiles and clothing made from bio-based resources.

The vast majority of clothing is made of two types of fibres; polyester and cotton. These, however, have considerable disadvantages and shortcomings. For this reason, emerging sustainable technologies for the production of cellulose and bio-based polyester textiles were developed and piloted at semi-industrial scale, hereby taking into account measures along the textile value chain to reduce the microfibre release.

Alongside technical material and processing research, the project also explored design and manufacturing by creating garment prototypes for streetwear and corporate wear. The design process was supported by a software tool which includes guidelines to support the design of bio-based fashion garments. The manufacturing of the prototype series was done via regional microfactories, showcasing the feasibility of a small scale, on-demand production process within Europe.

The HEREWEAR streetwear garments were produced via two distinct approaches. The so-called Flexi-dress was produced with a Material-First Approach, where the garment is designed in response to the material, in this case cellulose yarns made from wheat straw featuring a golden hue. The Flexi-Dress is a versatile knitted garment that allows the user to transform it effortlessly from a dress to a stylish top and skirt. The multifunctional way of wearing this modular dress is linked to the design for circular lifecycle extension.

The second streetwear garment, a Day Shirt, was designed with a Product-First Approach, where the material is developed for an existing garment design and the focus was on re-imagining and re-designing an existing product with bio-based textiles. The monomaterial use and removal of trimmings such as buttons allow an easier repair and recycling of the garments.

Overall, the project led to the creation of over 70 prototype garments, effectively demonstrating both HEREWEAR's technical achievements and its supporting services for design and networked manufacturing.